

# Mineral Industry Surveys

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## LEAD IN OCTOBER 2010

Domestic mine production (recoverable) of lead in October was 31,300 metric tons (t), according to the U.S. Geological Survey. Average daily mine production in October was 1,010 t, up slightly from that in September 2010. Year-to-date mine production through October 2010 was about 9% less than that of the same period of 2009. Secondary refinery production of lead increased by 6% compared with that of the previous month. Secondary refinery production through October 2010 was slightly less than that in the corresponding period of 2009.

Total imports of lead for consumption for the year to date through September 2010 were about 10% higher than those in the same period of 2009. Canada (87%) and Mexico (11%) were the principal sources of imported refined lead for the year through September 2010. Exports of lead ore and concentrates increased by 161% from those of the previous month. During the first 9 months of the year, total exports of lead ore and concentrates increased by 6% from those during the same period of 2009. Lead scrap exports through the first 9 months of 2010 were 65% less than those during the same period of 2009.

The average Platts Metals Week North American producer price for lead in October 2010 was \$1.15 per pound, up 12% from that of the previous month and 4% higher than that in October 2009. The London Metal Exchange (LME) cash price of lead in October 2010 averaged \$2,379 per metric ton, up by 9% from that of the previous month and 6% higher than that in October 2009. Global LME lead stocks at the end of October 2010 were 199,725 t, 3% greater than those at the end of September 2010 and 54% greater than those at month-end October 2009.

Teck Resources Ltd. (Vancouver, British Columbia, Canada) reported that lead in concentrate production at its Red Dog Mine in northwestern Alaska was 26,300 t in the third quarter of 2010, 17% less than that in the same period of 2009. Year-to-date lead in concentrate production through September 2010 was 92,600 t, about 3% less than that in the corresponding period of 2009. Lead grades declined in the third quarter of 2010 compared with the same period last year. Teck was mining at the edges of the main pit, which made separating ore from waste difficult. Production at the main pit was expected to end by 2012, and the

company was transitioning to mining ore from the adjacent Aqqaluk deposit. Teck expected that higher grade ore from Aqqaluk would account for approximately 65% of total throughput at Red Dog in 2011 and 100% of mine production in 2012 (Teck Resources Ltd., 2010, p. 19-20).

In early October, Doe Run Resources Corp. (St. Louis, MO) reached an agreement with the U.S. Department of Justice, the U.S. Environmental Protection Agency (EPA), and the Missouri Department of Natural Resources to spend approximately \$65 million to correct violations of several environmental laws at 10 of its lead mining, milling, and smelting facilities in southeast Missouri. The company will pay a \$7 million civil penalty for violating several environmental regulations. The civil penalty payment was to be split evenly between the Federal and State governments. Doe Run also decided that it would shut down operations at its Herculanum primary lead smelter by yearend 2013 instead of installing pollution control technologies that would reduce emissions. Herculanum was the only primary lead smelter operating in the United States in 2010. The smelter was to operate with an EPA-mandated 117,935-t annual production limit until it is closed. The company also agreed to provide an initial \$8.14 million in financial assurance to guarantee cleanup work at the Herculanum facility, \$23.7 million on upgrades at its other production facilities, and to establish a \$28 to \$33 million assurance trust fund for the continued cleanup of mining and milling facilities in Missouri (Schier, 2010; U. S. Environmental Protection Agency, 2010).

## References Cited

- Schier, Thorsten, 2010, Doe Run to upgrade plants, close Herculanum in EPA settlement: American Metal Market, October 8. (Accessed December 8, 2010, via <http://www.amm.com>.)
- Teck Resources Ltd., 2010, Results for the three months ended September 30, 2010: Vancouver, British Columbia, Canada, Teck Resources Ltd. news release, October 26, 52 p.
- U.S. Environmental Protection Agency, 2010, North America's largest lead producer to spend \$65 million to correct environmental violations at Missouri facilities: Washington, DC, U.S. Environmental Protection Agency news release, October 8, 3 p.

TABLE 1  
SALIENT LEAD STATISTICS IN THE UNITED STATES<sup>1</sup>

(Metric tons, lead content, unless otherwise specified)

|   | 2009      |                     | 2010                 |         |                      |
|---|-----------|---------------------|----------------------|---------|----------------------|
|   | Year      | January-<br>October | September            | October | January-<br>October  |
| Production:   |           |                     |                      |         |                      |
| Mine (recoverable)  | 395,000   | 338,000             | 30,100 <sup>r</sup>  | 31,300  | 307,000              |
| Secondary refinery:   |           |                     |                      |         |                      |
| Reported by smelters/refineries                                       | 1,120,000 | 932,000             | 93,400               | 99,200  | 923,000              |
| Estimated   | 11,200    | 9,320               | 934                  | 992     | 10,100               |
| Recovered from copper-base scrap <sup>e</sup>                         | 15,000    | 12,500              | 1,250                | 1,250   | 12,500               |
| Total secondary   | 1,150,000 | 954,000             | 95,600               | 101,000 | 946,000              |
| Consumption:  |           |                     |                      |         |                      |
| Reported  | 1,380,000 | 1,150,000           | 112,000 <sup>r</sup> | 114,000 | 1,130,000            |
| Undistributed <sup>e</sup>  | 41,500    | 34,600              | 3,420 <sup>r</sup>   | 3,410   | 34,000               |
| Total   | 1,430,000 | 1,190,000           | 118,000 <sup>r</sup> | 117,000 | 1,170,000            |
| Stocks, end of period, consumers and secondary smelters               | 61,700    | 55,200              | 59,800 <sup>r</sup>  | 60,600  | 60,600               |
| Imports for consumption:  |           |                     |                      |         |                      |
| Base bullion  | 844       | 710                 | 16                   | NA      | 162 <sup>2</sup>     |
| Refined metal   | 251,000   | 204,000             | 20,700               | NA      | 203,000 <sup>2</sup> |
| Exports:  |           |                     |                      |         |                      |
| Ore and concentrate   | 287,000   | 261,000             | 67,700               | NA      | 219,000 <sup>2</sup> |
| Bullion   | 34        | 34                  | --                   | NA      | 1 <sup>2</sup>       |
| Wrought and unwrought lead  | 82,000    | 73,200              | 12,400               | NA      | 59,900 <sup>2</sup>  |
| TEL/TML preparations, based on lead compounds                         | 2,070     | 2,000               | 39                   | NA      | 664 <sup>2</sup>     |
| Scrap (gross weight)  | 140,000   | 121,000             | 1,680                | NA      | 38,400 <sup>2</sup>  |
| Platts Metals Week North American producer<br>price (cents per pound) | 86.87     | 82.03               | 102.24               | 114.73  | 106.58               |

<sup>e</sup>Estimated. <sup>r</sup>Revised. NA Not available. -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits, except prices; may not add to totals shown.

<sup>2</sup>Includes data for January-September only; October 2010 data were not available at time of publication.

TABLE 2  
MONTHLY AVERAGE LEAD PRICES

|                  | North American<br>producer price<br>¢/lb | London Metal Exchange<br>cash |              | Sterling<br>exchange rate<br>\$/£ |
|------------------|--|-------------------------------|--------------|-----------------------------------|
|                  |  | \$/metric ton                 | £/metric ton |                                   |
| 2009:            |  |                               |              |                                   |
| September        | 107.80                                   | 2,203.82                      | 1,348.43     | 1.634360                          |
| October          | 110.79                                   | 2,240.00                      | 1,389.69     | 1.611869                          |
| November         | 111.03                                   | 2,308.19                      | 1,390.84     | 1.659562                          |
| December         | 111.11                                   | 2,327.76                      | 1,431.91     | 1.625638                          |
| January-December | 86.87                                    | 1,718.49                      | 1,086.44     | 1.564528                          |
| 2010:            |  |                               |              |                                   |
| January          | 111.24                                   | 2,367.70                      | 1,464.68     | 1.616535                          |
| February         | 110.35                                   | 2,122.45                      | 1,358.72     | 1.562100                          |
| March            | 110.53                                   | 2,171.66                      | 1,443.00     | 1.504961                          |
| April            | 110.88                                   | 2,264.48                      | 1,526.82     | 1.483130                          |
| May              | 109.46                                   | 1,882.18                      | 1,285.55     | 1.464105                          |
| June             | 105.49                                   | 1,703.39                      | 1,154.71     | 1.475168                          |
| July             | 95.11                                    | 1,836.40                      | 1,201.59     | 1.528305                          |
| August           | 95.79                                    | 2,074.77                      | 1,324.67     | 1.566257                          |
| September        | 102.24                                   | 2,183.69                      | 1,403.42     | 1.555982                          |
| October          | 114.73                                   | 2,379.01                      | 1,500.04     | 1.585957                          |
| January-October  | 106.58                                   | 2,098.57                      | 1,366.32     | 1.534250                          |

Source: Platts Metals Week.

TABLE 3  
CONSUMPTION OF PURCHASED LEAD-BASE SCRAP<sup>1</sup>

(Metric tons, gross weight)

| Item   | Stocks<br>September 30,<br>2010 |              | Net<br>receipts | Consumption | Stocks<br>October 31,<br>2010 |
|--|---------------------------------|--------------|-----------------|-------------|-------------------------------|
|  |                                 |              |                 |             |                               |
| Battery-lead                                     | 20,700                          | <sup>r</sup> | 94,800          | 92,600      | 23,000                        |
| Soft lead  | W                               |              | W               | W           | W                             |
| Drosses and residues                             | W                               |              | W               | W           | W                             |
| Other <sup>2</sup>                               | 917                             |              | 6,470           | 6,720       | 665                           |
| Total  | 21,600                          |              | 101,000         | 99,300      | 23,600                        |
| Percent change from preceding month <sup>3</sup> | XX                              |              | -2.5            | -0.3        | +9.4                          |

<sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data; included with "Other." XX Not applicable.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes solder, common babbitt, antimonial lead, cable covering, type metals, and other lead-base scrap.

<sup>3</sup>Based on unrounded data; preceding monthly data may have been revised.

TABLE 4  
LEAD, TIN, AND ANTIMONY RECOVERED FROM  
LEAD-BASE SCRAP IN OCTOBER 2010<sup>1</sup>

(Metric tons)

| Product recovered     | Secondary metal content |     |          |
|-----------------------|-------------------------|-----|----------|
|                       | Lead                    | Tin | Antimony |
| Soft and calcium lead | 51,800                  | --  | --       |
| Remelt lead           | W                       | --  | --       |
| Antimonial lead       | 15,500                  | (2) | (2)      |
| Other <sup>3</sup>    | 31,900                  | (2) | (2)      |
| Total lead-base       | 99,200                  | 125 | 203      |

W Withheld to avoid disclosing company proprietary data; included in "Other."

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Withheld to avoid disclosing company proprietary data; included in "Total."

<sup>3</sup>Includes cable lead, lead-base babbitt, solder, type metals, and other products.

TABLE 5  
CONSUMPTION OF LEAD IN THE UNITED STATES<sup>1</sup>

(Metric tons, lead content)

| Use   | 2009                 |                     | 2010                 |         |                     |
|---|----------------------|---------------------|----------------------|---------|---------------------|
|   | January-<br>December | January-<br>October | September            | October | January-<br>October |
| Metal products:   |                      |                     |                      |         |                     |
| Ammunition, shot and bullets  | 70,500               | 61,300              | 6,270                | 5,570   | 62,000              |
| Brass and bronze, billet and ingots   | 3,920                | 3,280               | 233                  | 233     | 2,370               |
| Cable covering, power and communication<br>and caulking lead, building construction | 5,830                | 5,030               | 613 <sup>r</sup>     | 1,120   | 6,660               |
| Casting metals  | 20,100               | 16,700              | 1,340                | 1,340   | 12,200              |
| Sheet lead, pipes, traps and other extruded products                                | 27,100               | 22,500              | 2,330                | 2,270   | 26,300              |
| Solder  | 7,270                | 6,120               | 687                  | 687     | 7,180               |
| Storage batteries, including oxides   | 1,210,000            | 1,010,000           | 99,500 <sup>r</sup>  | 99,800  | 986,000             |
| Terne metal, type metal, and other metal products <sup>2</sup>                      | 16,700               | 13,900              | 1,220                | 1,220   | 12,400              |
| Total metal products  | 1,360,000            | 1,130,000           | 112,000 <sup>r</sup> | 112,000 | 1,110,000           |
| Other oxides and miscellaneous  | 21,300               | 18,100              | 1,970                | 1,580   | 19,100              |
| Total reported  | 1,380,000            | 1,150,000           | 114,000 <sup>r</sup> | 114,000 | 1,130,000           |
| Undistributed <sup>e</sup>  | 41,500               | 34,600              | 3,420 <sup>r</sup>   | 3,410   | 34,000              |
| Grand total   | 1,430,000            | 1,190,000           | 118,000 <sup>r</sup> | 117,000 | 1,170,000           |

<sup>e</sup>Estimated. <sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes lead consumed in foil, collapsible tubes, annealing, plating, galvanizing, and fishing weights.

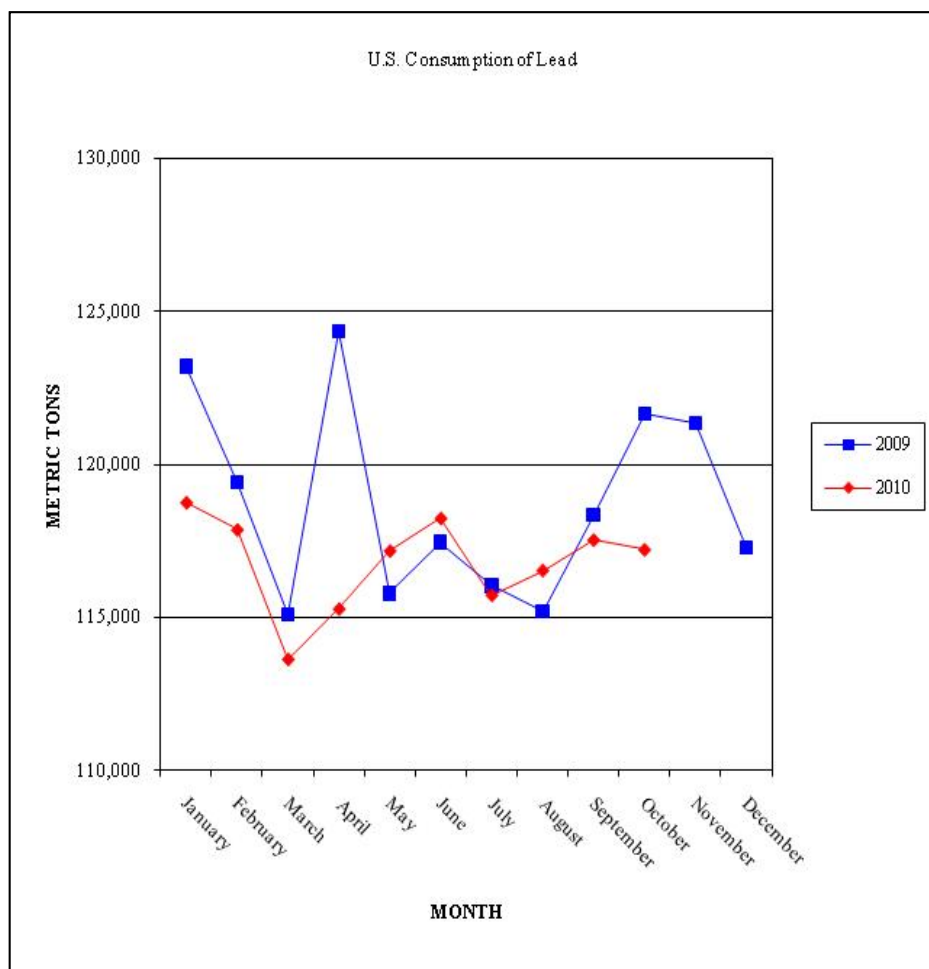


TABLE 6  
CONSUMER AND SECONDARY SMELTER STOCKS, RECEIPTS, AND CONSUMPTION OF LEAD<sup>1</sup>

(Metric tons, lead content)

| Type of material  | Stocks<br>September 30,<br>2010 | Net<br>receipts | Consumption | Stocks<br>October 31,<br>2010 |
|-------------------|---------------------------------|-----------------|-------------|-------------------------------|
| Soft lead         | 34,900 <sup>r</sup>             | 74,500          | 74,500      | 34,900                        |
| Antimonial lead   | 15,400                          | 21,500          | 20,700      | 16,200                        |
| Lead alloys       | W                               | W               | W           | W                             |
| Copper-base scrap | W                               | W               | W           | W                             |
| Total             | 59,800 <sup>r</sup>             | 115,000         | 114,000     | 60,600                        |

<sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data; included in "Total."

<sup>1</sup>Data are rounded to no more than three significant digits.

TABLE 7  
U.S. EXPORTS OF LEAD, BY CLASS<sup>1</sup>

(Metric tons unless otherwise specified)

|  | 2009      |                   | 2010      |           |                   |
|--|-----------|-------------------|-----------|-----------|-------------------|
|  | Year      | January-September | August    | September | January-September |
| Lead content:  |           |                   |           |           |                   |
| Ore and concentrates   | 287,000   | 207,000           | 25,900    | 67,700    | 219,000           |
| Bullion  | 34        | 25                | 1         | --        | 1                 |
| Materials excluding scrap                                    | 82,000    | 67,700            | 6,310     | 12,400    | 59,900            |
| TEL/TML preparations, based on lead compounds                | 2,070     | 1,870             | 88        | 39        | 664               |
| Total  | 371,000   | 276,000           | 32,300    | 80,000    | 279,000           |
| Gross weight, scrap  | 140,000   | 108,000           | 2,820     | 1,680     | 38,400            |
| Spent lead-acid batteries, used for starting engines (units) | 7,300,000 | 3,550,000         | 1,410,000 | 1,630,000 | 11,000,000        |

-- Zero.

<sup>1</sup>Data are rounded to more than three significant digits; may not add to totals shown.

<sup>2</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 8  
U.S. IMPORTS FOR CONSUMPTION BY TYPE OF MATERIALS AND BY COUNTRY OF ORIGIN<sup>1</sup>

(Metric tons, lead content)

| Country of origin        | 2009    |                   | 2010   |           |                   |
|--------------------------|---------|-------------------|--------|-----------|-------------------|
|                          | Year    | January-September | August | September | January-September |
| Ore, matte, etc., Canada | 1,490   | 1,490             | --     | --        | --                |
| Base bullion:            |         |                   |        |           |                   |
| Mexico                   | 810     | 675               | --     | 16        | 124               |
| Other                    | 34      | 34                | --     | --        | 38                |
| Total                    | 844     | 710               | --     | 16        | 162               |
| Pigs and bars:           |         |                   |        |           |                   |
| Canada                   | 205,000 | 145,000           | 14,300 | 18,800    | 176,000           |
| Mexico                   | 41,100  | 32,700            | 2,360  | 1,670     | 22,900            |
| Peru                     | 991     | 991               | --     | --        | --                |
| Other                    | 4,020   | 3,600             | 299    | 180       | 4,240             |
| Total                    | 251,000 | 182,000           | 16,900 | 20,700    | 203,000           |
| Grand total              | 253,000 | 185,000           | 16,900 | 20,700    | 203,000           |

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.